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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,902	09/28/2005	Shyusei Ohya	SPL-05-1361	4296
35811 7590 01/16/2008 IP GROUP OF DLA PIPER US LLP ONE LIBERTY PLACE 1650 MARKET ST, SUITE 4900 PHILADELPHIA, PA 19103			EXAMINER HAILEY, PATRICIA L	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 01/16/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,902	Applicant(s) OHYA ET AL.	
	Examiner Patricia L. Hailey	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-14, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 15, 16, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>09/28/05</u> . | 6) <input type="checkbox"/> Other: _____ |

Applicants' Preliminary Amendment, filed on September 28, 2005, has been made of record and entered. Claims 2-7 have been amended to ensure proper format and to eliminate multiple claim dependency, and new claims 10-20 have been added.

Claims 1-20 are now pending in this application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Document was filed on September 28, 2005.

Specification

2. ***The disclosure is objected to because of the following informalities:***

On page 15 of the Specification, in lines 11-13, the phrase "dispersed and supported therein" is repeated.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless—

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 7, 9-14, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohya et al. (U. S. Patent Application Publication No. 2002/0132159).

Ohya et al. disclose a metal-dispersed carbon porous membranous structure comprising said carbon porous membranous structure and fine particles of at least one metal or alloy dispersed in the structure. See paragraph [0049] of Ohya et al.

The fine metal or alloy particles, examples of which include platinum and palladium, preferably have an average particle size of 1 to 10 nm. See paragraphs [0050-0051] of Ohya et al. (considered to read upon **claims 1, 2, 4, and 11**).

The fine metal or alloy particles can be dispersed in the porous carbon structure via techniques such as vacuum deposition, and a method using a solution of a metal precursor, in which the carbon membranous structure is soaked in a metal precursor solution, and chemical reduction. See paragraphs [0052] to [0057] of Ohya et al. (considered to read upon **claims 3 and 10**).

Ohya et al. also disclose the formation of an electrode for fuel cells by immersing the metal-deposited porous carbon membranous structure in an electrolyte solution. The formed electrode provides an MEA (membrane electrode assembly) for fuel cells. See paragraphs [0059] and [0061] of Ohya et al. (considered to read upon **claims 7, 9, 12-14, 17, and 18**).

In view of these teachings, Ohya et al. anticipate claims 1-4, 7, 9-14, 17, and 18.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. ***Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohya et al. (U. S. Patent Application Publication No. 2002/0132159) in view of Zuber et al. (U. S. Patent No. 6,156,449).***

Ohya et al. is relied upon for its teachings in the above 102(b) rejection. While this reference teaches the formation of a membrane electrode assembly (MEA) by hot-pressing the above-disclosed electrode and "a commercially available polymer electrolyte membrane" (see paragraph [0061] of Ohya et al.), the reference does not explicitly disclose applying the electrode to both sides of the membrane, as recited in claim 8.

However, Ohya et al., in paragraph [0061], also disclose that the "MEA can be produced in a usual manner."

Zuber et al. is relied upon to provide the conventional teaching that a membrane electrode assembly can consist of a polymer electrolyte membrane which is provided on both sides with catalyst layers, said catalyst layers comprising catalytically active components (such as platinum group metals) having an average crystallite size of approximately between 1 and 10 nm. See col. 1, lines 22-45 of Zuber et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Ohya et al. by incorporating therein the conventional techniques of producing a membrane electrode assembly, as suggested by Zuber et al., which is considered within the purview of the "usual manner" disclosed by Ohya et al.

Allowable Subject Matter

9. ***Claims 5, 6, 15, 16, 19, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.***

10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or suggest the claim limitation that 15% to 95% of the metal fine particles consist of multiply twinned particles, which are composed mainly of platinum.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Fridays, from 7:00 a.m. to 3:30 p.m.

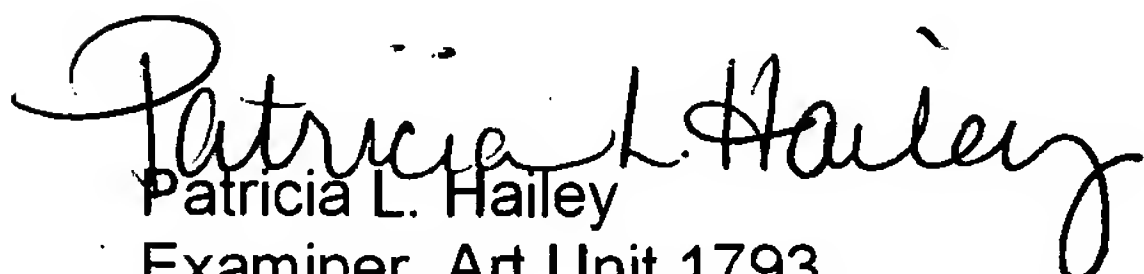
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Patricia L. Hailey
Examiner, Art Unit 1793
January 14, 2008